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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,986	09/14/2000	Harold Rosen	pd-2000083	8909

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EXAMINER

LEI, TSULEUN R

ART UNIT

PAPER NUMBER

2686

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/661,986

Applicant(s)

ROSEN ET AL.

Examiner

TSULEUN R. LEI

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perahia et al. (U.S. Patent 6,188,896) in view of Han et al. (U.S. Patent 4,343,005).

Regarding Claim 1, Perahia teaches a method of preventing interference in a communication system comprising the steps of generating a fixed reuse pattern in a service area from a high altitude communications device (Fig.6), said pattern having at least a first resource cell and a second resource cell (Fig.6). Perahia does not teach selectively suppressing a side lobe of a beam. However, Han teaches that the sidelobe patterns can be successfully suppressed by careful antenna design as to permit reuse of resources (Han, Col.5, Lines 24-27). Also, it is obvious that the purpose of sidelobe suppression is to allow resource reuse, so the resulting pattern of the suppressed sidelobe would be such that the suppressed portion would align with the reused resource and the non-suppressed portion would be other than the reused resource. Therefore, It would have been obvious for one of ordinary skill in the art at the time the

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invention was made to carefully design the antenna as taught by Han, in the method taught by Perahia, so the reuse pattern can be shape according to the traffic pattern. Perahia as modified by Han teaches a high altitude communication device selectively suppressing a side lobe of a beam having a first resource to form a suppressed portion and a non-suppressed portion so that said non-suppressed portion aligns with said second resource cell.

Regarding Claim 2, Perahia as modified by Han teaches a method as recited in claim 1 wherein the step of selectively suppressing comprises the step of reshaping the antenna to suppress side lobe interference at the interference locations (Col.5, Lines 21-25; Col.12, Lines 46-48).

Regarding Claim 3, Perahia as modified by Han teaches a method as recited in claim 2. Neither Perahia nor Han teaches the step of maintaining the shape of the antenna in non-interference location. However, as explained in Claim 1, it is obvious that the purpose of sidelobe suppression is to allow resource reuse, so the resulting pattern of the suppressed sidelobe would be such that the suppressed portion would align with the reused resource and the non-suppressed portion would be other than the reused resource, and therefore, the shape of the antenna in non-interference location would be maintained.

Regarding Claim 4, Perahia as modified by Han teaches a method as recited in claim 1 wherein said first resource and said second resource comprise a frequency (Col.4, Line 44, frequency reuse).

Regarding Claim 5, Perahia as modified by Han teaches a method as recited in claim 1, but neither Perahia nor Han teaches the first resource and said second resource comprise polarization. However, polarization reuse is commonly used for resource reuse and therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to design a system so the said first resource and said second resource comprise polarization.

Regarding Claim 6, Perahia as modified by Han teaches a method as recited in claim 1, but neither Perahia nor Han teaches the first resource and said second resource comprise an orthogonal code. However, orthogonal code reuse is commonly used in CDMA system for resource reuse and therefore, it would have been obvious for one of ordinary skill in the art at the time of invention to design a system so the said first resource and said second resource comprise an orthogonal code.

Regarding Claim 7, Perahia as modified by Han teaches a method as recited in claim 1 wherein said high altitude communication device comprises a satellite (Fig.6).

Regarding Claim 8, Perahia as modified by Han teaches a communication system as recited in claim 1 wherein said high altitude communication device comprises a stratospheric platform (Perahia, Fig.6, it is inherent that in the satellite-based system of Perahia include the system of stratospheric platform).

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Regarding Claim 9, see Claim 1 for the teaching of Perahia and Han.

Regarding Claim 10, see Claim 7 for the teaching of Perahia and Han.

Regarding Claim 11, see Claim 8 for the teaching of Perahia and Han.

Regarding Claim 12, see Claim 4 for the teaching of Perahia and Han.

Regarding Claim 13, see Claim 5 for the teaching of Perahia and Han.

Regarding Claim 14, see Claim 6 for the teaching of Perahia and Han.

Regarding Claim 15, see Claims 1 & 2 for the teaching of Perahia and Han.

Regarding Claim 16, see Claim 3 for the teaching of Perahia and Han.

Regarding Claim 17, see Claim 1 for the teaching of Perahia and Han.

Regarding Claim 18, see Claim 4 for the teaching of Perahia and Han.

Regarding Claim 19, see Claim 5 for the teaching of Perahia and Han.

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Regarding Claim 20, see Claim 6 for the teaching of Perahia and Han.

Regarding Claim 21, see Claim 1 for the teaching of Perahia and Han.

Regarding Claim 22, Perahia and Han teach a method as recited in claim 21, further comprising generating the beams using an antenna on-board a high altitude communication device (Perahia, Col.4, Lines 29-32).

Regarding Claim 23, see Claim 7 for the teaching of Perahia and Han.

Regarding Claim 24, see Claim 8 for the teaching of Perahia and Han.

***Response to Arguments***

3. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TSULEUN R. LEI whose telephone number is 703-305-4828.

The examiner can normally be reached on 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D Banks-Harold can be reached on 703-305-4379. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

*TRL*

TRL

August 20, 2003

*Charles Appiah*

**CHARLES APPIAH  
PRIMARY EXAMINER**